



Features

- Plastic package has underwriters laboratory flammability classification 94V-0
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- Guardring for overvoltage protection
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed:
250°C/10 seconds, 0.25"(6.35mm) from case

Mechanical Characteristics

- Case : JEDEC TO-220FAC, TO-220AC & TO-263 molded plastic body
- Weight : 0.08 ounce, 2.24grams
- Terminals : Plated leads, solderable per MIL-STD-750, Method2060
- Polarity: As marked
- Mounting Position : Any
- Mounting Torque : 10 in-lbs maximum

Maximum Ratings and Electrical Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbols	MBR1090	MBR10100	Units	
Maximum recurrent peak reverse voltage	V_{RRM}	90	100	V	
Working peak reverse voltage	V_{RWM}	90	100	V	
Maximum DC blocking voltage	V_{DC}	90	100	V	
Maximum average forward rectified current at $T_c=133^\circ\text{C}$	$I_{F(AV)}$	10		A	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	150		A	
Peak repetitive reverse surge current per leg at $t_p=2\mu\text{s}$, 1KHz	I_{RRM}	0.5		A	
Voltage rate of change (rated V_R)	dv/dt	10000		V/ μs	
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175		°C	
RMS isolation voltage (MBRF type only) from terminals to heatsink with $t=1.0$ second, $RH \leq 30\%$	V_{ISOL}	4500 ⁽¹⁾ 3500 ⁽²⁾ 1500 ⁽³⁾		V	
Maximum instantaneous forward voltage per leg (Note.4) at $I_F=10\text{A}$, $T_c=25^\circ\text{C}$ at $I_F=10\text{A}$, $T_c=125^\circ\text{C}$ at $I_F=20\text{A}$, $T_c=25^\circ\text{C}$ at $I_F=20\text{A}$, $T_c=125^\circ\text{C}$	V_F	0.80 0.65 0.95 0.75		V	
Maximum reverse current at rated DC blocking voltage (Note.4) $T_j=25^\circ\text{C}$ $T_j=100^\circ\text{C}$	I_R	100 6.0		μA mA	
Typical thermal resistance, junction to case	$R_{th(j-c)}$	MBR	MBRF	MBRB	°C/W
Typical thermal resistance, junction to ambient	$R_{th(j-a)}$	2.0	3.5	2.0	
		60.0	---	60.0	

- Notes:**
1. Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
 2. Clip mounting (on case), where leads do overlap heatsink
 3. Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm(0.19")
 4. Pulse test: 300 μs pulse width, 1% duty cycle